

AMENDMENTS TO THE DRAWINGS

The attached sheet of drawings includes changes to Figure 10.

Attachment: Replacement sheet
 Annotated sheet showing changes

REMARKS

Claims 1, 3, 4, 6-10, 12, 13, 19-24, and 30-34 are pending in this application. Claims 1, 3-10, 12-13, 19-24, and 30-33 stand rejected. By this Amendment, claim 5 is being cancelled without prejudice and claim 34 has been added. The amendments made to the claims do not alter the scope of these claims, nor have these amendments been made to define over the prior art. Rather, the amendments to the claims have been made to improve the form thereof. In light of the amendments and remarks set forth below, Applicants respectfully submit that each of the pending claims is in immediate condition for allowance.

The drawings and specification were objected to for failing to disclose spacer 60 in Figure 10. Attached please find a revised copy of Figure 10 as well as an amendment to paragraph 66 of the specification reciting the spacer 60 as shown in Figure 10.

Claim 5 was rejected for reciting International Organization for Standardization 7816-2 and contact areas in accordance with said standard. Claim 5 has been canceled rendering this rejection moot.

Claims 1, 3-10, 12-13, 19-24, and 30-33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,384,425 ("Huber") in view of U.S. Patent No. 6,235,553 ("Kawan"). Applicant respectfully requests reconsideration and withdrawal of this rejection.

Among the limitations of claim 1 not shown in the prior art is "at least some of the interconnector provided with area-covering metallizations, which serve for increasing the bending rigidity of the substrate." This feature is not disclosed anywhere in Huber.

The Office Action asserts that this feature is shown in Huber in Figure 2 where contact elements are in the form of “interconnects and that the interconnects are provided with area covering metallization (because the interconnects are formed of conductive metal material), which inherently serves for increasing the bending rigidity of the substrate.” See Office Action at 4.

We respectfully disagree with this interpretation of Figure 2. As shown in Figure 2 of Huber, conductor structures 9, 10, 11, 14, and 15 are shown having been produced by lining with metal foil and etching. Subsequent etching of the conductor structure is performed so that metallized areas 11 remain around the cutouts 12. Conductor structures 15 are provided which run under the frame into its interior in order to connect with the semiconductor chip. Also shown in Figure 2 is a metallized area 9 which corresponds to the shape of the frame and is at least the same thickness as the conductor structures 15. However, there is no disclosure of some of the interconnects being provided with area covering metallizations which serve for increasing the bending rigidity of the substrate.

Specifically, as discussed in the specification, the contact side metallization has regions 32 which bring about an increased moment of resistance in the region of the integrated circuit to be mounted later. As a result, the bending rigidity of the carrier element 11 is increased. Regions 32 are designed in such a way that they are approximately the same width as the central region 34. Regions 32 in this case extend over a line of symmetry 40 of the carrier element 11. The fact that the width of the regions 32 approximately coincides with the width of the central region 34 means that there are two predetermined bending lines 43 running parallel to the line of symmetry 40 and along which the carrier element can buckle under excessive flexural load. This ensures that no flexural loads act on the integrated circuit. As such, we respectfully submit that the area covering metallization as explicitly recited in the claims are not disclosed by Huber.

Kawan was not added to cure the noted deficiency in Huber but to show additional limitations which, even if it were to show, do not cure the deficiency in Huber above.

Kawan does not disclose that contact elements in a form of interconnects are provided with area-covering metallizations, which serve for increasing the bending rigidity of the substrate.

Kawan discloses a conductive path 60 (see Figure 7, for example) which are in the shape of an arc as can be seen from Figure 7. The conductive path is used to carry electrostatic discharges to ground and away from the circuitry within the semiconductor chip (column 6, lines 5g to 67).

These elements perhaps also increase the bending rigidity of the substrate. But these elements are additional elements and not contact elements in the form of interconnects. Kawan does not provide any motivation to use the contact path 60 for increasing the rigidity. The function of the contact path as described in column 6, lines 59 to 67 teaches away from a person skilled in the art using these elements as interconnects. The elements 80 only make sense if they are connected to ground. That means, even if a person skilled in the art recognizes that the elements 60 increase the rigidity, Kawan could not lead him to the invention. Therefore, the cited combination fails to render the pending claims obvious.

Applicants have responded to all of the rejections and objections recited in the Office Action. Reconsideration and a Notice of Allowance for all of the pending claims are therefore respectfully requested.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass

this application to issue.

If the Examiner believes an interview would be of assistance, the Examiner is welcome to contact the undersigned at the number listed below.

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Respectfully submitted,

By 

Ian R. Blum

Registration No.: 42,336
DICKSTEIN SHAPIRO LLP
1177 Avenue of the Americas
New York, New York 10036-2714
(212) 277-6500
Attorney for Applicants

IRB/mgs
Attachments

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REPLACEMENT SHEET

ANNOTATED SHEET SHOWING CHANGES



FIG 9

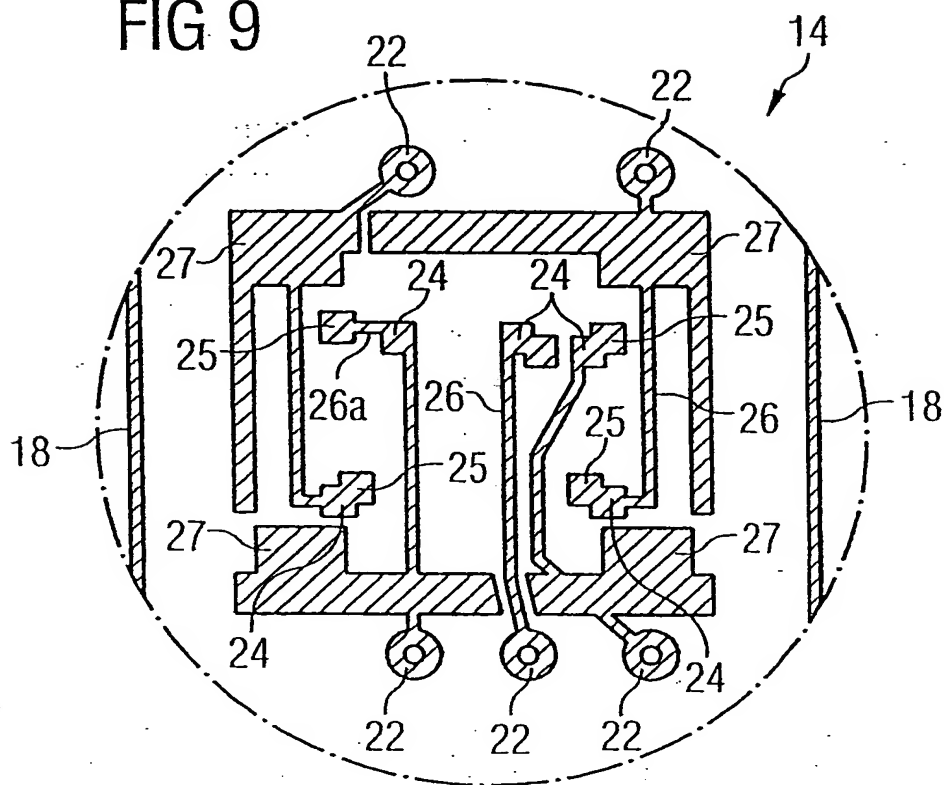


FIG 10

